Available online freely at www.isisn.org

Bioscience Research

Print ISSN: 1811-9506 Online ISSN: 2218-3973

Journal by Innovative Scientific Information & Services Network

RESEARCH ARTICLE BIOSCIENCE RESEARCH, 2017 14(3): 000-000. **OPEN ACCESS**

Spermatogenic cell count of mice (*Mus musculus*) after the treatment with polysaccharide-K from *Coriolus versicolor* extract

Sandhy Kartikasari, Sri Puji Astuti Wahyuningsih*

Department of Biology, Faculty of Science and Technology, Airlangga University, Surabaya 60115, **Indonesia.**

.

***Correspondence: sri-p-a-w@fst.unair.ac.id** **Accepted:** 00 August. 2017 **Published online:** 00 Sep. 2017

The objectives of this study were to determine the effect of different doses of polysaccharide-K from *Coriolus versicolor* extract after 35 days of injection on the number of spermatogenic cells in mice (*Mus musculus*). Twenty eight, 4-8 week old male mice, weight between 20-25 g were used in this study. The animal try were divided into four groups. The first group was the control group (K), treated by giving them aquadest by gavage for 35 days. The other groups (P1, P2, and P3) as the treatment groups, were treated by using three different doses of polysaccharide-K (15, 30, and 60 mg/kg of body weight respectively) injected by gavage for 35 days. Testicular histological slides were prepared to observe the structure of spermatogenic cells. The data of parameters such as the number of spermatogonia cells, spermatocyte cells, and oval spermatid cells were collected. The number of spermatocyte cells and oval spermatid cells was tested using the One Way Anova followed and Duncan. The number of spermatogonia cells was tested using Brown Forsythe. The results showed that spermatogonia and spermatocyte cell numbers were not significantly different in K, P1, P2, and P3 respectively (P>0.5). The number of oval spermatid cells was significantly different (P <0.5). In P1, the number of spermatid cells decreased 7.9% compared to K. The number of oval spermatid cells P2 and P3 was relatively equal to K. The conclusion of this research showed that the polysaccharide-K treatment from *C. versicolor* extract had no effect on both the number of spermatogonia and spermatocyte cells, but slightly decreased the number of oval spermatids. Polysaccharide-K is still safe to use as a herbal medicine

Keywords: ***Coriolus versicolor*, polysaccharide krestin, spermatogonia, spermatocyte, spermatid**

INTRODUCTION

Coriolus versicolor is a mushroom that is widely used in traditional Asian herbal medicine. There are two main substances that can be extracted from the mushroom, polysaccharide peptide (PSP) and polysaccharide-K (PSK, krestin), which are being studied as cancer treatments (Asterina, 2011). Polysaccharide-K has the appearance of a light powder or a dark-brown substances that dissolves in hot water. Polysaccharide-K is obtained from the body and mycelium of the mushroom. It has a major component of β-glucan, with β-1.4 being the main chain and β-1.3 and β-1.6 being side chains bound to the protein membrane (Cui and Chisti, 2003).

According to Wahyuningsih et al. (2009), polysaccharide-K can improve the conditions of immune-competent cells, restoring and strengthening the function of non-specific immune responses, as well as specific responses in mice that have been injected with *Mycobacterium tuberculosis*. Ho et al. (2006) reported that polysaccharide-K may inhibit leukemia, lymphoma, and hepatoma in vitro as well.

The lethal dose 50 (LD_{50}) from